

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Claims 1, 4, 7, 9, 12, 16-18, 21, 24, 25, and 27 are currently being amended.

After amending the claims as set forth above, claims 1-28 are still pending in this application.

Claim Rejections – 35 U.S.C. § 112

On page 2 of the Office Action the Examiner rejected Claims 1-28 under 35 U.S.C. § 112 as being indefinite. The use of phrases “the basis of” and “a position of the rotor” have been eliminated. Applicants have amended independent Claims 1, 7, 18 and 21 and their progeny accordingly. Therefore, it is respectfully requested that the rejection be withdrawn.

Claim Rejections – 35 USC § 102

On pages 2-3 of the Office Action, Claims 1-5 and 7-28 were rejected as anticipated by Kumar et al. (U.S. 5,691,625) – under § 102(b) – and Turner et al. (U.S. 6,681,173).¹

A. Claim Rejections under Kumar – the ‘625 Patent

The Examiner rejected Claims 1-5 and 7-28 as being anticipated by Kumar et al.. Claim 1 (as amended) recites,

¹ For a rejection to be proper under 35 U.S.C. §102(b), every element and limitation found in the rejected claim must be found in the 102(b) reference. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. V. Union Oil Co. of California*, §14F.2d628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, MPEP §2131.

A method of detecting an angular position of a rotor of an electrical machine ... [wherein]

as a function of an estimated speed of rotation, there is delivered to a control circuit configured to control the electrical machine,

the second signal whenever the estimated speed of rotation is below a first threshold greater than or equal to the minimum measurement speed;
or

the first signal whenever the estimated speed of rotation is greater than a second threshold greater than or equal to the first threshold but less than or equal to the maximum estimation speed...

The first signal is delivered to the control unit when the estimated speed of the engine is above a predetermined threshold. While the second signal is delivered to the control unit when the engine speed is equal to or less than a predetermined threshold speed. Kumar et al., however, do not disclose alternatively delivering two different signals to a control circuit as recited in Claim 1. The Examiner references the Abstract of the Kumar reference in the Office Action. However, the Abstract states, “The simulated rotor position states are provided to one or more inverter controllers which, in turn, provide firing signals to one or more corresponding inverters which are used to crank an engine...” Kumar et al. disclose sending the same signal to a number of different inverters, however, they make no disclosure of sending a “first” and “second signal” according to “minimum [or maximum] speed”.

In Column 3, lines 36-56, the Kumar et al. disclose selectively monitoring the rotational speed of the rotor according to the engine speed. (“Once the rotor is rotating faster than a predetermined rate, which typically is 240 rpm, the engine is presumed to be started and the motoring mode (i.e., engine cranking mode) of operation is discontinued).” Kumar et al. do not disclose delivering,

the second signal whenever the estimated speed of rotation is below a first threshold greater than or equal to the minimum measurement speed;
or
the first signal whenever the estimated speed of rotation is greater than a second threshold greater than or equal to the first threshold but less than or equal to the maximum estimation speed

With Applicants' method, a first signal is sent when the engine is operating in a certain range and a second signal is sent when the engine is operating in a different range. Kumar et al. do not disclose sending alternate signals according to the engine/rotor speed.

Kumar et al. do not anticipate Claim 1. For a rejection to be proper under 35 U.S.C. §102(b), every element and limitation found in the rejected claim must be found in the 102(b) reference. Clearly, this is not the case. Therefore, it is respectfully requested that the rejection of Claim 1 and its progeny be withdrawn.

Similarly, independent Claims 1, 7, 18 and 21 and their progeny are not anticipated by Kumar et al. for reasons similar to those articulated above.

With regards to Claim 2, Claim 2 recites,

wherein during an increase in the speed of rotation while the second signal is being delivered, a changeover from the second signal to the first signal is performed when the estimated speed of rotation reaches the second threshold, and wherein, during a decrease in the speed of rotation while the first signal is being delivered, a changeover from the first signal to the second signal is performed when the estimated speed of rotation reaches the first threshold.

The method of Claim 2 differentiates the speed of rotation at which a changeover is made from the second signal to the first signal, from the speed of rotation at which a changeover is made from the first signal to the second signal. This can result in a very steady changeover even when, for any reason, the speed slightly decreases immediately after a changeover from the second signal to the first signal, or slightly increases after a changeover from the first signal to the second signal.

Kumar discloses only one threshold for a changeover from the motoring mode of operation to the cranking mode of operation and vice versa. Column 3, lines 36-56. Therefore, if the changeover from the motoring mode to the cranking mode results in a decrease of the speed, the system will change back to the motoring mode, and this may result in a risk of a pumping effect. Each and every element of Claim 2 is not disclosed in Kumar. Therefore, it is respectfully requested that the rejection of Claim 2 and its progeny be withdrawn.

B. Claim Rejections under Turner – the ‘173 Patent

On Page 3, the Examiner rejected Claims 1-5 and 7-28 under § 102 as being anticipated by Turner. However, it is unclear whether the Examiner bases his rejection of 35 U.S.C. § 102(b) or § 102(e). In Item 5 of the Office Action, the Examiner quotes language from § 102(e). However, in Item 6 of the Office Action, the Examiner states that “Claim 1-5 and 7-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Turner et al (U.S. 6,681,173).” Regardless, the rejection should fail in either instance as the Turner reference is not a sufficient reference under § 102(b) nor under § 102(e).

With regards to § 102(b), Applicants are entitled to a priority date at least as early as December 23, 2002 based on an international patent application filed through the Patent Cooperation Treaty (PCT/FR02/04523). This priority claim is indicated at least in the Application Data Sheet and Transmittal Letter which accompanied the U.S. national phase filing of this application. A Section 102(b) rejection requires that, “(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States...”. (underlining added for emphasis). The Turner reference was not published (nor, of course, was it patented) until on or after September 18, 2003, which is well after the § 102(b) priority date in which this application is entitled. The Turner reference is not a sufficient reference under § 102(b); therefore, withdrawal of the rejection of Claims 1-5 and 7-28 is respectfully requested.

With regards to § 102(e), Applicants are entitled to a priority date at least as early as January 03, 2002 based on French patent application filed through the French Patent Office (FR0200030). This priority claim is indicated at least in the Application Data Sheet and Transmittal Letter which accompanied the U.S. national phase filing of this application. A Section 102(e) rejection requires that, “(e) the invention was described in - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent...”. (underlining added for

emphasis). The Turner reference was not filed until March 15, 2002 which is well after the § 102(e) priority date in which this application is entitled. The Turner reference is not a sufficient reference under § 102(b) nor under § 102(e). Therefore, withdrawal of the rejection of Claims 1-5 and 7-28 is respectfully requested.

Rejections under 35 U.S.C. § 103

On pages 3-4 of the Office Action, Claim 6 was rejected as being obviated by Kumar et al. (U.S. 5,691,625) – under § 103(a).²

Claim 6 includes the limitations of Claim 1 and further recites, “the first threshold is equal to 500 rpm and the second threshold is equal to 700 rpm.” The Examiner has not presented a *prima facie* case of obviousness based on (at least) the reasons articulated by Applicants with respect to the Examiner’s § 102 rejections. Kumar et al. make no disclosure of sending a “first” and “second signal” according to “minimum [or maximum] speed”. Kumar et al. teach, the selective operation of a monitoring mode and/or actuation of contactors “in response to the speed of the engine attaining a threshold that marks the conclusion of cranking (e.g., 240 rpm), and therefore the successful starting of engine 16.” The examiner has not presented a teaching or suggestion of all the claimed limitations as required under the MPEP § 2143. Therefore, the rejection of Claim 6 is respectfully requested to be withdrawn.

Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

² A proper rejection under 35 U.S.C. § 103(a) requires that the Examiner establish *prima facie* obviousness. As recited in the MPEP, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.” MPEP § 2142. Three basic criteria must be met to establish *prima facie* obviousness. MPEP § 2143. First, there must be some suggestion or motivation to modify a reference or combine teachings. *Id.*

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 06-1447. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 06-1447. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 06-1447.

Respectfully submitted,

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Second, there must be reasonable expectation of success. *Id.* Third, the prior art reference or references must teach or suggest all the claim limitations. *Id.*